



Perinatal Indicators Report for Washington Residents June 2006

The health of pregnant women and their newborn infants is a priority for the Washington State Department of Health (DOH) and the Department of Social and Health Services (DSHS). This document provides key information to identify perinatal health issues and help guide decision-making by the Washington State Department of Health and DSHS Medical Assistance Administration. Annual updates for this report will provide data for ongoing needs assessment and program evaluation.

The *Perinatal Indicators Report* is a collaborative project conducted by the Statewide Perinatal Advisory Committee, the First Steps Database staff from the DSHS Division of Research and Data Analysis, and Maternal and Infant Health and Maternal Child Health Assessment staff from the Department of Health. The indicators are derived from Washington State birth, fetal death and death certificate data, the First Steps Database, and the Pregnancy Risk Assessment Monitoring System (PRAMS).

PLEASE NOTE: In 2003, a new birth certificate form was implemented, which collects information differently than previous years. Caution should be used when interpreting year-to-year changes from 2002 to 2003. Specifically, changes seen in race/ethnicity, birth attendant, method of delivery, prenatal care, and smoking may be wholly, or in part, due to these reporting changes.

Highlights of the Report:

- The total number of live births has remained stable since 1998 at approximately 80,000 births per year.
- Medicaid-funded deliveries represented 45.9% of births in 2004.
- Birth rates and pregnancy rates decreased among teens 15-17 years and 18-19 years, especially from 1993 to 2003.
- SIDS rates have decreased substantially since 1990, however changing reporting practices of coroners/medical examiners have played a role in this decline.
- Smoking during pregnancy, as reported on the birth certificate, has declined since 1992.
- In 2003, the percent of women initiating breastfeeding was high in Washington State at approximately 90%.

Areas of concern include:

- Cesarean births have been increasing since the late 1990s. Differences in the distribution of primary and repeat cesarean births seen in 2003 are likely due to reporting changes.
- In 2004, 47% of women were either overweight or obese prior to pregnancy.
- Total low birth weight has increased steadily since 1990, in part due to the increase in multiple deliveries (twins, triplets, etc.)
- In 2004, African American and Native American infant mortality rates continued to exceed infant mortality rates of other race and ethnic groups.
- In 2004, the singleton low birth weight (LBW) rate for African Americans was 2 times the rate for Whites.
- The singleton very low birth weight rate among African Americans remained over twice the rate of Whites between 1990 and 2004.
- In 2004, women receiving Medicaid had lower rates of first trimester prenatal care and higher rates of late and no prenatal care than women who did not receive Medicaid.
- In 2004, smoking rates during pregnancy were significantly higher for women receiving Medicaid than for women who did not receive Medicaid.
- In 2003, the unintended pregnancy rate was approximately 53%.

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All rates and percentages are calculated after excluding records with unknown data. In some instances where the amount of unknown data is substantial the amount of unknown data is shown below the calculated rates and percentages. Summaries of the data are based on trend analysis of data from 1990-2004.

Livebirths and Deliveries	1996		2001		2002		2003		2004		HP 2010	2003 WA Rank
Total Livebirths (# of liveborn infants)	77,874		79,542		79,003		80,482		81,715			
Livebirths By Mother's Race/Ethnicity ¹												
White	65,385	86.8%	65,308	84.8%	64,159	84.1%	65,273	84.3%	67,823	84.1%		
African American	2,946	3.9%	3,184	4.1%	3,245	4.2%	3,414	4.4%	3,543	4.4%		
Native American	1,806	2.4%	1,810	2.4%	1,853	2.4%	1,746	2.3%	1,849	2.3%		
Asian and Pacific Islander	5,131	6.8%	6,639	8.6%	6,899	9.0%	6,952	9.0%	7,470	9.3%		
Other	27	0.0%	71	0.1%	96	0.1%						
Unknown	2,579		2,530		2,751		3,095		1,030			
Hispanic Origin ²	8,907	11.4%	12,115	15.2%	12,393	15.7%	13,206	17.1%	14,250	17.7%		
Total Deliveries (# of women who delivered livebirths or fetal deaths) ³	76,938		78,308		77,796		79,237		80,443			
Medicaid-Funded Deliveries ⁴	32,732	42.5%	34,124	43.6%	33,743	43.4%	36,118	45.6%	36,915	45.9%		
Multiple Gestation Deliveries ⁵	968	1.3%	1,111	1.4%	1,157	1.5%	1,208	1.5%	1,202	1.5%		

- The total number of live births has remained stable since 1998 at approximately 80,000 births per year.
- From 1990 to 2004, the proportions of births to White women decreased while births to women of other races/ethnicities increased. Greatest increases have been among births to Asian women which increased over 90% and to Hispanic women which increased over 145% during this time period.
- In 2004, approximately 84% of births were to white women, 4% to African American women, 2% to Native American women, and 9% to Asian women.
- Approximately 18% of births were to Hispanic women.
- Since the expansion of Medicaid through First Steps in 1989, Medicaid-funded deliveries have increased over 40% and in 2004 represented 45.9% of deliveries.
- Multiple gestations have increased an estimated average of 2.4% per year since 1990, and in 2004 represented 1.5% of deliveries.

1. In 2003, WA introduced a new birth certificate form which allows for designation of multiple races. In order to compare 2003 and 2004 data with previous years, records with multiple race designations (3.0% in 2004) were statistically "bridged" into one of the five major race categories used prior to 2003. This is also the reason why no livebirths show up as "Other"; if selected they were recoded to one of the five categories.

2. Persons of Hispanic origin may be of any race.

3. "Total deliveries" includes women who delivered a livebirth or fetal death (stillbirth) greater than 20 weeks gestation. Each woman is counted only once regardless of the plurality of her pregnancy. These data are from the First Steps Database which excludes approximately 500 births per year that are unavailable for matching to Medical Assistance data.

4. "Medicaid-funded deliveries" includes women who delivered a livebirth or fetal death (stillbirth) greater than 20 weeks gestation whose deliveries were covered by Medicaid. Each woman is counted only once regardless of the plurality of her pregnancy. A delivery is considered covered by Medicaid if the mother received Medicaid-paid prenatal or delivery services or if she was enrolled in Medicaid managed care for at least 3 of the 6 months prior to delivery. These data are from the First Steps Database which excludes approximately 500 births per year that are unavailable for matching to Medical Assistance data.

5. "Multiple gestation deliveries" includes women who delivered livebirths or fetal deaths (stillbirths) greater than 20 weeks gestation that were twins, triplets or quadruplets. These data are from the First Steps Database which excludes approximately 500 births per year that are unavailable for matching to Medical Assistance data.

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Birth Rate (Live births per 1,000 women) ⁶	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank ⁷
15-44 years	62.0	61.2	60.8	62.0	62.8		17
15-19 years	47.1	35.6	33.0	31.5	31.2		13
15-17 years	26.6	17.7	16.8	15.3	15.5		11
18-19 years	81.2	62.8	57.7	55.9	54.4		14
Pregnancy Rate [(Live births + fetal deaths \geq 20 weeks + abortions) per 1,000 women] ⁶	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
15-44 years	83.3	81.6	80.7	81.7	82.0		
15-19 years	76.7	59.6	55.9	53.2	51.7		
15-17 years	46.9	32.9	30.9	28.8	28.5	43.0	
18-19 years	126.2	100.3	93.8	90.2	86.3		

- Both birth rates and pregnancy rates have decreased substantially from 1990 to 2004 for women of childbearing age (15-44 years).
- For women 15-44 years, birth and pregnancy rates decreased largely from 1990-1995. Since 1995, rates declined slightly. Rates appear higher in 2003 and 2004, but are not statistically higher.
- In contrast, among teens 15-17 years and 18-19 years, substantial rate decreases in birth and pregnancy rates occurred between 1993 and 2004.

6. Age-specific rates equal the number of births or pregnancies occurring to women in a specific age group per 1,000 female population in that age group.

7. The 2003 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. As of Spring 2006, the 2004 Washington State Rank is unavailable. Among states, the birth rates for women 15-17 years ranged from 6.7 to 37.4 livebirths per 1000 women and for women 18-19 years from 37.1 to 102.1 per 1000 women. The birth rates for women 15-19 ranged from 18.2 to 62.9 livebirths per 1000 women and for women 15-44 years ranged from 51.1 to 92.2 livebirths per 1000 women.

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Livebirth Delivery Services (All Births Occurring in WA)	1996		2001		2002		2003		2004		HP 2010	2003 WA Rank
Births Occurring in Washington State (includes residents and non-residents)	76,308		79,101		78,590		80,022		81,404			
Birth Facility												
Hospital (includes Military Hospitals)	74,884	98.1%	77,389	97.8%	76,900	97.8%	78,367	97.9%	79,776	98.0%		
Birth Center	289	0.4%	561	0.7%	525	0.7%	715	0.9%	692	0.9%		
Home	1,011	1.3%	1052	1.3%	1063	1.4%	883	1.1%	880	1.1%		
Other (includes Born on Arrival, Other)	124	0.2%	98	0.1%	102	0.1%	55	0.1%	56	0.1%		
Unknown	0		1		0		2		0	0.0%		
Birth Attendant ^{8,9}												
MD/DO	68,937	90.4%	69,164	87.9%	68,864	88.0%	70,660	88.3%	73,130	89.9%		
Certified Midwife ¹⁰	5,132	6.7%	6,721	8.5%	6,757	8.6%	6,879	8.6%	6,149	7.6%		
Licensed Midwife	803	1.1%	1,763	2.2%	1,743	2.2%	1,285	1.6%	1,274	1.6%		
Nurse	643	#REF!	473	0.6%	400	0.5%	709	0.9%	643	0.8%		
Other (includes Other Midwife, Father, Hospital Administrator, and Other)	771	#REF!	555	0.7%	487	0.6%	426	0.5%	165	0.2%		
Unknown	22		425		339		63		45			

- In 2004, 98% of births in Washington State occurred in hospitals. This proportion has remained stable since 1990.
- MDs or DOs were listed as the birth attendant in approximately 90% of births in 2004. The percentage of MDs or DOs listed as the birth attendant decreased between 1990 and 2002. Concurrently, the percent of births delivered by certified (nurse) midwives (7.6% in 2004) and licensed midwives (1.6% in 2004) increased. Certified midwife deliveries increased primarily in the early 1990s, while licensed midwife deliveries increased in the late 1990s.
- Changes between 2002 and 2003 in the reporting of Licensed Midwives and Nurses may be due to reporting changes.

8. Between 1999 and 2004, a number of deliveries were reported with "Hospital Administrator" listed as the birth attendant. In reviewing the data it appears this may be due to reporting issues, which are being addressed by the Washington State Center for Health Statistics. In the majority of these reports, the hospital administrator certified the birth and the birth attendant was unknown. In these cases, the data have been recoded as unknown attendant. However, when the hospital administrator was listed as the birth attendant, the record was not recoded.

9. In 2003, Washington introduced a new electronic birth reporting system. To improve reporting, pre-set drop down boxes for completing the birth attendant field were added. Provider qualifications were pre-determined and may have influenced changes observed in the reporting of licensed midwives and nurses as birth attendants.

10. Based on a review of the data, the category "Certified Midwife" refers to Certified Nurse Midwives.

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Livebirth Delivery Services (cont'd)	1996		2001		2002		2003		2004		HP 2010	2003 WA Rank ¹¹
Method of Delivery ¹²												
Total Vaginal Births	63,260	83.0%	61,100	77.3%	59,447	75.6%	59,675	74.6%	59,233	72.8%		
Vaginal Birth After C-Section (VBAC)	1,971	2.6%	1,417	1.8%	1,135	1.4%	1,217	1.5%	1,130	1.4%		
Primary C-Section	8,560	11.2%	10,991	13.9%	11,652	14.8%	14,826	18.6%	15,647	19.2%		
Repeat C-Section	4,399	5.8%	7,001	8.9%	7,484	9.5%	5,514	6.9%	6,519	8.0%		
Unknown	89		9		7		7	0.0%	5	0.0%		
Total C-Sections per 100 livebirths	17.0		22.8		24.4		25.4		27.2			18
Primary C-Section per 100 livebirths w/o history of c-section	12.3		15.6		16.7		20.2		21.2		15.5	
VBAC per 100 livebirths w/ history of c-section	30.9		16.8		13.2		18.1		14.8			5

- In 2003, a new birth certificate form was introduced that collected method of delivery differently than the prior form. It appears that this may have affected the reporting of prior cesarean sections, consequently influencing the primary c-section proportion, the repeat c-section proportion, and the VBAC rates in 2003 and later years.
- Over the past 15 years, the distribution of the method of delivery has changed in Washington. In the early 1990's vaginal births were increasing and both primary and repeat c-sections were decreasing. Since 1998, though, the reverse is occurring, vaginal births have decreased and both primary and repeat c-sections are increasing.
- In 2004, about 73% of births were delivered vaginally, down from about 83% in the mid 1990s.
- The increase in c-section deliveries is also evident in the recent drop in the vaginal birth after c-section (VBAC) rate which decreased from approximately 30 VBACs per 100 livebirths with a history of c-section in the mid 1990s to 13.2 in 2002. The apparent increase in the 2003 and 2004 rates are spurious, and likely due to the change in reporting of prior c-section.

11. The 2003 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. Among states, the cesarean sections rate ranged from 19.1 to 31.1%, and the VBAC rate for women with a history of c-section ranged from 6.4 to 25.6%.

12. In 2003, WA introduced a new birth certificate form which collects information on previous c-sections in a separate section of the birth certificate from the Method of Delivery section for the current birth. Differences in method of delivery from 2002 to 2003 may be due to this change.

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Maternal Mortality and Morbidity ¹³	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Maternal Mortality ¹⁴							
Pregnancy - Associated deaths per 100,000 livebirths ¹⁵	42.4	35.2	30.4	n/a	n/a		
Pregnancy - Related deaths per 100,000 livebirths ¹⁵	7.7	11.3	10.1	n/a	n/a		
Maternal Morbidity							
Total Diabetes per 100 livebirths				5.1	5.3		
Prepregnancy Diabetes				0.6	0.6		
Gestational Diabetes				4.5	4.8		
Total Hypertension per 100 livebirths				6.9	6.6		
Prepregnancy Hypertension				1.3	1.1		
Gestational Hypertension				5.6	5.5		
Group B Strep Culture Positive per 100 livebirths				15.6	16.7		

- From 1990-2002, the pregnancy-associated mortality ratio has remained stable. In 2002, the ratio was 30.4 deaths per 100,000 livebirths. These deaths occur within 1 year of pregnancy and are due to any cause. They are not necessarily related to the pregnancy.
- From 1990-2002, the pregnancy-related mortality ratio has also been stable. In 2002, the ratio was 10.1 per 100,000 livebirths. These are deaths directly caused by pregnancy or by a condition exacerbated by pregnancy.
- Maternal morbidity as reported on the birth certificate indicates that in 2004, over 5% of women had diabetes, almost 7% of women had hypertension and almost 17% of women were Group B Strep culture positive during pregnancy.

13. In many of the rates presented in this section, single year data are subject to fluctuation due to small numbers.

14. Maternal mortality data from 2000-2002 may be underrepresented as the linkage of deaths to hospitalization data has not been completed.

15. A pregnancy-associated death is a death of a women while pregnant or within a year of delivery or termination of pregnancy from any cause. A pregnancy-related death is a death of a woman while pregnant or within a year of delivery or termination of pregnancy from any cause related to or aggravated by pregnancy or its management. Cause of death was determined by the Perinatal Advisory Committee Maternal Mortality Subcommittee.

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Maternal Mortality and Morbidity (cont'd)	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Prepregnancy Body Mass Index (BMI) per 100 livebirths ¹⁶							
Underweight (BMI < 18.5)				3.4	3.3		
Normal Weight (BMI 18.5-24.9)				49.6	49.3		
Overweight (BMI 25-29.9)				25.6	25.8		
Obese (BMI 30+)				21.5	21.6		
Morbidly Obese (BMI 40+)				3.6	3.6		
Unknown BMI (percent of all pregnant women)				21.4%	19.2%		
Weight Gain per 100 livebirths ¹⁷							
Recommended Weight Gain				32.7	32.5		
Less than Recommended Weight Gain				13.8	14.0		
Greater than Recommended Weight Gain				53.6	53.5		
Missing Weight Gain (percent of all pregnant women)				21.4%	19.2%		

- Missing data from the birth certificate inhibit our ability to adequately track obesity among pregnant women in Washington. Over 19% of birth records were missing prepregnancy weight or height, preventing the calculation of prepregnancy body mass index and pregnancy weight gain.
- Among women with weight and height data, 48% of women began pregnancy either overweight or obese. Almost 4% of women were morbidly obese.
- In addition, over 50% of women gained more weight during pregnancy than the amount recommended by the 1990 Institute of Medicine Report.

16. Prepregnancy body mass index is calculated as 703.1 * (prepregnancy weight in pounds/square of height in inches). As a reference, a women who is 5'5" tall is underweight if she weighs less than 111 pounds before pregnancy, is normal weight if she weighs 111-149, is overweight if she weights 150-179 pounds, is obese if she weighs 180 pounds or more, and is morbidly obese if she weighs over 240 pounds.

17. Weight gain is calculated as weight at delivery less prepregnancy weight. Categories of weight gain are based on the Institute of Medicine recommendations for weight gain in pregnancy and take prepregnancy BMI into account. The recommended pregnancy weight gain by prepregnancy BMI status is underweight (28-40 pounds), normal weight (25-35 pounds), overweight (15-25 pounds) and obese (15 pounds).

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Infant Mortality	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank ¹⁸
Fetal deaths per 1,000 livebirths ¹⁹	5.9	5.3	5.5	6.2	5.3	4.1	
Perinatal deaths per 1,000 livebirths ²⁰	9.0	8.2	8.3	9.1	7.8	4.5 ²¹	
Infant deaths per 1,000 livebirths (period) ²²	6.0	5.8	5.7	5.6	5.5	4.5	6 (2002)
Neonatal deaths per 1,000 livebirths (period) ²³	3.7	3.7	3.6	3.8	3.3	2.9	
Post Neonatal deaths per 1,000 livebirths (period) ²⁴	2.2	2.1	2.1	1.8	2.2	1.2	
SIDS deaths per 1,000 livebirths (period) ²⁵	1.0	0.8	0.9	0.6	0.6		

- From 1990 through the early to mid-1990s, total infant mortality, race-specific infant mortality and Medicaid-specific infant mortality declined substantially. Since the mid-1990s, rates have decreased slightly for Whites and increased for Native Americans and Hispanics.
- SIDS rates decreased substantially from 1990 through 2004; however, changes in reporting practices of coroners/medical examiners have played a role in this decline.

18. In 2002 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. For 2002 infant mortality rates range from 4.8 per 10000 livebirths to 10.5 per 1000 livebirths.

19. Fetal death reporting in Washington is required when the fetus is 20 weeks gestation or more.

20. Perinatal deaths refer to fetal deaths of 20 weeks gestation or more as well as deaths to infants less than 7 days old.

21.The Healthy People 2010 target for perinatal mortality is defined as 28 weeks or more gestation plus deaths of infants less than 7 days old.

22. Infant deaths refer to deaths to infants from birth through 364 days of age. These are crude infant mortality rates which use infant deaths in a given year as the numerator and infant births in the same year as the denominator. These are also known as period infant mortality rates.

23. Neonatal deaths refer to deaths to infants birth through 27 days of age.

24. Post neonatal deaths refer to deaths to infants from 28 through 364 days of age.

25. Cause of death was coded with ICD-9 in 1990-1998 and with ICD 10 in 1999-2002. Rates during 1990 and 1998 have been multiplied by a comparability ratio. See <http://www.doh.wa.gov/ehsphl/chs/chs-data/infdeath/download/InfantF1.xls> for additional information. Rates prior to 1999 adjusted by the ICD10-ICD9 comparability ratio for SIDS of 1.0362. When interpreting trends in SIDS, the category “unexplained infant death” should be considered to see if that has also changed over time. Since neither of these conditions is very well-defined, the designation of a particular infant death as SIDS (ICD-10 R95) vs. unexplained death (ICD-10 R99) may be a matter of personal preference on the part of the coroner/ME.

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Mortality (cont'd) ²⁶	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Race/ethnic-specific Infant deaths per 1,000 livebirths (period) ²⁷							
White	5.3	5.5	5.2	4.9	4.9	4.5	
African American	13.6	11.6	8.9	8.5	10.4	4.5	
Native American	5.5	10.5	11.9	9.7	9.7	4.5	
Asian and Pacific Islander	4.1	3.8	5.1	3.9	5.0	4.5	
Hispanic Origin ²⁸	4.0	4.7	5.5	5.1	5.5	4.5	
Infant deaths per 1,000 livebirths (cohort) ²⁹							
Total	5.8	5.6	5.4	5.6	n/a		
Medicaid	7.5	6.8	6.7	7.0	n/a		
Non-Medicaid	4.6	4.7	4.4	4.4	n/a		
Singleton	5.3	5.1	4.9	5.0	n/a		
Twins	28.7	21.3	20.0	20.3	n/a		
Triplets	0.0	57.1	19.0	94.6	n/a		

- In 2004, African American (10.4 per 1,000) and Native American (9.7 per 1,000) mortality rates continued to exceed infant mortality rates of other race/ethnic groups.
- Between 1995 and 2004 Hispanic and Native American infant mortality rates significantly increased.
- The mortality of infants whose mothers received Medicaid-funded maternity care (7.0 per 1,000) also continued to exceed the mortality of infants whose mothers did not receive Medicaid-funded maternity care (5.6 per 1,000).
- In 2003, the mortality of twins (20.3 per 1,000) and triplets (94.6 per 1,000) greatly exceeded the mortality of singleton infants (5.0 per 1,000).

26. In many of the rates presented below, single year data are subject to fluctuation due to small numbers.

27. Race and ethnicity are determined from the birth certificate after matching infant death certificates to the child's birth certificate. There were 26, 20, 34, 57, 34, and 25 deaths in 1996, 2001-2004 that were of unknown race/ethnicity. In 2003, WA introduced a new birth certificate form which allows for designation of multiple races. In order to compare 2003 and 2004 data with previous years, records with multiple race designations (3.0% in 2004) were statistically "bridged" into one of the five major race categories used prior to 2003. These are period infant mortality rates based on the matched infant death file.

28. Persons of Hispanic origin may be of any race.

29. These are cohort infant mortality rates. Cohort mortality rates describe the experience of a birth cohort. The denominator includes all births in a specified year (cohort) and the deaths before 365 days of age among those infants in the numerator. The deaths may occur in the cohort year or the subsequent year. These data come from the First Steps Database and exclude approximately 500 births each year that are unavailable for matching to Medical Assistance data.

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Birth Weight	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank ³⁰
Low Birth Weight Births ³¹							
Low birth weight (LBW) births per 100 livebirths	5.6	5.8	5.8	6.1	6.2	5.0%	3
Singleton	4.4	4.5	4.4	4.6	4.8		
Multiple Births	50.2	50.0	50.7	52.4	51.5		
Singleton LBW births per 100 singleton livebirths ³²							
White	4.1	4.2	4.1	4.1	4.4		
African American	9.0	8.1	8.5	8.9	8.7		
Native American	5.3	6.5	5.4	5.6	6.0		
Asian and Pacific Islander	4.9	5.3	5.6	5.8	6.1		
Hispanic Origin ³³	4.7	4.3	4.6	4.6	5.0		
Medicaid ³⁴	5.6	5.2	5.2	5.3	5.8		
Non-Medicaid	3.5	3.9	3.7	4.0	4.0		

- Total low birth weight (LBW) increased steadily from 5.3% in 1990 to 6.2% in 2004. The increase in total low birth weight is in part attributable to the influence of multiple births. The singleton low birth weight rate has also increased, but the rate of increase is about half that of total low birth weight.
- In 2004, the highest singleton LBW rates were for African Americans (8.8%).
- In 2004, the Medicaid singleton LBW rate (5.8%) continued to exceed the Non-Medicaid singleton LBW rate (4.0%). However, since 1990, the Medicaid singleton LBW rate has decreased or remained stable while the Non-Medicaid singleton LBW rate has increased.

30. The 2003 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. Total LBW rates ranged from 6.0 per 100 livebirths to 11.4 per 100 livebirths.

31. Low birth weight is defined as less than 2,500 grams (5 lbs. 8 oz.).

32. In 2003, WA introduced a new birth certificate form which allows for designation of multiple races. In order to compare data from 2003 and 2004 with previous years, records with multiple race designations (3.0% in 2004) were statistically “bridged” into one of the five major race categories used prior to 2003.

33. Persons of Hispanic origin may be of any race.

34. These data come from the First Steps Database and exclude approximately 500 births each year that are unavailable for matching to Medical Assistance data.

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Birth Weight (cont'd)	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank ³⁵
Very Low Birth Weight Births ³⁶							
Very low birth weight (VLBW) births per 100 livebirths	1.0	1.0	1.0	1.0	1.1	0.9%	2
Singleton VLBW births per 100 singleton livebirths ³⁷							
Total	0.8	0.8	0.8	0.8	0.8		
White	0.7	0.7	0.7	0.7	0.7		
African American	1.9	1.7	1.9	1.7	1.6		
Native American	1.1	1.4	1.4	1.1	0.8		
Asian	0.7	0.9	0.8	0.7	1.0		
Hispanic Origin ³⁸	0.8	0.8	0.9	0.8	0.9		
Medicaid ³⁹	1.0	0.9	0.9	0.9	1.0		
Non-Medicaid	0.6	0.7	0.7	0.6	0.7		
VLBW births at Facilities with Level III OB/Nursery Services ⁴⁰	n/a	75.9%	76.6%	81.6%	79.5%	90%	
Births < 1000 g at Facilities with Level III OB/Nursery Services ⁴⁰	n/a	72.2%	76.9%	80.2%	79.5%		

- While it is not visible in the rates as presented above, the total VLBW and singleton VLBW have increased on average 2% per year from 1990 to 2004. During this time, singleton VLBW has significantly increased among Whites, Asians, and those who receive Medicaid.
- The singleton VLBW rate among African Americans has remained approximately twice the rate of Whites between 1990 and 2004.
- One measure used to evaluate the effectiveness of perinatal regionalization is the percent of VLBW births occurring at facilities with Level III OB/Nursery Services. In Washington State, approximately 80% of VLBW infants were born at facilities with Level III OB/Nursery Services in 2004.

35. The 2002 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the Washington State Center for Health Statistics reports and do not always match the federally reported Washington State rates. VLBW rates ranged from 0.9 per 100 livebirths to 2.2 per 100 livebirths.

36. Very low birth weight is defined as less than 1,500 grams (3 lbs. 4 oz.).

37. In 2003, WA introduced a new birth certificate form which allows for designation of multiple races. In order to compare 2003 and 2004 data with previous years, records with multiple race designations (3.0% in 2004) were statistically “bridged” into one of the five major race categories used prior to 2003.

38. Persons of Hispanic origin may be of any race.

39. These data come from the First Steps Database and exclude approximately 500 births each year that are unavailable for matching to Medical Assistance data.

40. These data are limited to resident births that occurred in Washington State. Facilities with Level III OB/Nursery Services are as recommended by the Perinatal Advisory Committee Subgroup on Perinatal Level of Care.

Perinatal Indicators Report for Washington Residents

Preterm Births ⁴¹	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Preterm births per 100 livebirths	8.8	10.1	9.8	10.0	10.0	7.6%	
Very preterm (<32 weeks)	1.4	1.5	1.4	1.6	1.6		
Moderately preterm (32-36 weeks)	7.4	8.7	8.4	8.4	8.4		
Singleton preterm births per 100 livebirths	7.7	8.9	8.6	8.8	8.8		
Very preterm (<32 weeks)	1.1	1.1	1.1	1.2	1.2		
Moderately preterm (32-36 weeks)	6.6	7.8	7.5	7.6	7.6		

- The rate of singleton preterm birth is not quite double the singleton LBW rate. Almost 66% of singleton preterm infants in Washington State in 2004 weighed 2500 grams or more at delivery.
- The rate of singleton preterm birth increased an estimated 1.6% per year from 7.6 per 100 livebirths in 1993 to 8.8 per 100 livebirths in 2004. This increase is seen both in moderately preterm births (32-36 weeks) and very preterm births (< 32 weeks).

41. Gestational age is calculated following National Center for Health Statistics methodology. This is documented at <http://www.cdc.gov/nchs/data/dvs/instr12.pdf>.

Perinatal Indicators Report for Washington Residents

Initiation of Prenatal Care ⁴²	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank ⁴³
First Trimester Prenatal Care per 100 pregnant women ⁴⁴							
Total	83.4	83.3	83.5	81.0	79.3	90%	49
Medicaid	73.1	73.6	74.4	72.6	69.0		
Non-Medicaid	90.9	90.5	90.2	89.0	88.3		
Late/No Prenatal Care per 100 pregnant women ⁴⁵							
Total	3.5	2.9	3.0	4.4	4.9		46
Medicaid	5.8	4.9	5.0	6.6	7.4		
Non-Medicaid	1.8	1.5	1.5	2.5	2.7		
Unknown Prenatal Care (percent of all pregnant women)							
Total	7.7%	8.2%	8.8%	18.7%	17.9%		n/a
Medicaid	8.9%	10.1%	10.6%	17.6%	17.0%		
Non-Medicaid	6.8%	6.8%	7.5%	19.6%	18.7%		

- The high number (and percent) of birth certificates with missing data for prenatal care became a greater problem in 2003 and later years, most likely due to changes in the birth certificate reporting form which asks for the exact date of first prenatal visit. Year to year changes from 2002 to 2003 should be interpreted with caution.
- Prenatal care initiation in the first trimester was 79.3% in 2004.
- First trimester prenatal care initiation for women receiving Medicaid increased substantially between 1990 and 1994, with little improvement since 1994 (First Steps started in August 1989).
- Between 2002 and 2004 the percentage of women with late or no prenatal care has significantly increased overall and for both Medicaid and non-Medicaid. The overall rate of late or no prenatal care was 4.9% in 2004.

42. These data are from the First Steps Database and reflect prenatal care provided to women who delivered either a livebirth or fetal death. These data exclude approximately 500 births every year that are unavailable for matching to Medical Assistance data. First trimester prenatal care and late/no prenatal care rates are calculated after excluding records missing month prenatal care began. "Unknown prenatal care" represents the proportion of all records missing month prenatal care began.

43. The 2003 WA State Rank is the ranking of Washington among the 50 states based on the National Center for Health Statistics data, with 1 being the best and 50 the worst. Note that the rates reported in this document are based on the First Steps Database reports and do not always match the federally reported Washington State rates. Among states, first trimester prenatal care initiation ranged from 92.8% of births to 68.9% of births. Late or no prenatal care ranged from 1.1% to 8.1%, and the unknown prenatal care percent ranged from 0.2% to 9.1% (excluding PA and WA which are using the new birth certificate).

44. "Pregnant women" refers to women who delivered a live birth or fetal death greater than 20 weeks gestation.

45. "Late/No prenatal care" refers to women who received prenatal care during their third trimester or received no prenatal care.

Perinatal Indicators Report for Washington Residents

Smoking During Pregnancy ⁴⁶	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Rate of Smoking in Pregnancy (per 100 pregnant women) ⁴⁷	16.0	12.6	11.9	10.8	10.1	1%	
Medicaid	26.1	21.7	20.8	18.7	17.2		
Non-Medicaid	8.4	5.7	5.3	4.2	4.1		
Unknown (percent of all pregnant women)	4.0%	2.5%	2.7%	1.5%	3.0%		

Medicaid Expenditures for Maternal & Infant Services ^{48, 49}	1996	2001	2002	2003	2004	HP 2010	2003 WA Rank
Average costs per client for maternal services (prenatal through end of 2nd month post partum)	\$4,127	\$6,832	\$7,033	\$7,336	\$7,548		
Average costs per client for infant services (first year of life)	\$3,217	\$4,683	\$5,061	\$5,273	\$6,050		
Combined average costs for maternal/infant services	\$7,344	\$11,516	\$12,094	\$12,609	\$13,598		

- Smoking during pregnancy, as reported on the birth certificate, has declined steadily from 19.9% in 1992 to 10.1% in 2004.
- Smoking rates are significantly higher for women receiving Medicaid but have also declined steadily from 31.4% in 1992 to 17.2% in 2004.
- In 2003 the Birth Certificate question regarding smoking changed from "Yes/No" to the number of cigarettes smoked in the first, second, or third trimester. Regression analysis was used to compare historical data to the data collected with the new certificate. While the rate of change over time has shifted, the change begins prior to 2003, so it is difficult to say whether this a true shift or may be due to reporting changes.

46. These data are from the First Steps Database and reflect women who delivered a livebirth or fetal death greater than 20 weeks gestation who reported smoking during pregnancy on the birth or fetal death certificate. These data exclude approximately 500 births every year that are unavailable for matching to Medical Assistance data.

47. "Pregnant women" refers to women who delivered a live birth or fetal death greater than 20 weeks gestation. Rate of smoking in pregnancy is calculated after excluding records missing information on smoking during pregnancy. "Unknown" represents the records that were excluded before calculating rates of smoking during pregnancy.

48. Dollars are the actual amounts paid for a given year and have not been adjusted for inflation. These data were reported by the First Steps Database in February 2006. Data are subject to change as claims are paid.

49. Maternity Support Services and Maternity Case Management costs are included in the prenatal and post partum costs.

Perinatal Indicators Report for Washington Residents

Data for the perinatal indicators on the previous pages came from Washington State birth, fetal death, and death certificate data as well as the First Steps Database. The following perinatal indicators were collected from the Pregnancy Risk Assessment Monitoring System (PRAMS), an ongoing population based surveillance system sponsored by the Centers for Disease Control and Prevention that surveys new mothers who are representative of all registered births to Washington State residents. The Washington State Department of Health has been collecting PRAMS data since 1993. For more information on PRAMS data contact MCH Assessment at 360-236-3533 or visit the website at <http://www.doh.wa.gov/cfh/prams> .

Perinatal Indicators Report for Washington Residents

Unintended Pregnancy	PRAMS 2001			PRAMS 2002			PRAMS 2003		
	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid
Survey Question 10. Thinking back to just before you got pregnant, how did you feel about becoming pregnant?	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)
I wanted to be pregnant sooner	17 (15, 20)	9 (7, 12)	23 (19, 27)	19 (16, 22)	15 (11, 19)	22 (18, 26)	15 (13,18)	14 (11, 18)	16 (13, 20)
I wanted to be pregnant later	30 (27, 33)	43 (38, 48)	21 (17, 25)	32 (29, 36)	45 (39, 50)	24 (20, 28)	31 (28, 35)	45 (39, 50)	20 (17, 24)
I wanted to be pregnant then	43 (40, 47)	34 (29, 39)	50 (45, 55)	41 (38, 45)	28 (23, 33)	50 (45, 55)	46 (43, 50)	33 (28, 38)	57 (52, 62)
I didn't want to be pregnant then or at any time in the future	9 (7, 11)	13 (10, 17)	6 (4, 9)	7 (5, 9)	13 (9, 16)	4 (2, 6)	7 (6, 10)	8 (6, 12)	7 (5, 10)
Estimated births from unintended pregnancies ⁵⁰	39 (36, 43)	56 (51, 61)	27 (23, 31)	40 (36, 43)	57 (52, 62)	28 (24, 32)	39 (35, 42)	53 (48, 58)	27 (23, 31)
Estimated pregnancies that were unintended ⁵¹	54			54			53		

- Approximately 39% of Washington State births resulted from unplanned pregnancies in 2003. This rate is significantly higher for women receiving Medicaid (53%) than for women not receiving Medicaid (27%).
- The unintended pregnancy rate was approximately 53% in 2003. (This rate includes births and abortions.)

50. Responses to “I wanted to be pregnant later” are referred to as “mistimed” and responses to “I didn’t want to be pregnant then or at any time in the future” are referred to as “unwanted.” Together these two categories are what is considered "unintended."

51. Estimated pregnancies that are unintended are calculated by taking the estimated births that were unintended from PRAMS and multiplying this by the number of livebirths. The number of abortions is added to this number, and then the sum is divided by the number of livebirths and abortions. This estimate assumes that all reported abortions are due to unintended pregnancies, though a small percentage might be medically indicated.

Perinatal Indicators Report for Washington Residents

Provider Screening	PRAMS 2001			PRAMS 2002			PRAMS 2003		
	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid
Survey Question 21. During any of your prenatal care visits, did a doctor, nurse, or other health care worker ask you questions about any of the things listed below?	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)
a. If you were smoking cigarettes	91 (89, 93)	92 (89, 95)	90 (86, 92)	90 (88, 92)	92 (89, 95)	89 (86, 92)	91 (89, 93)	95 (92, 96)	89 (85, 91)
b. How much alcohol you were drinking	82 (79, 85)	81 (76, 85)	83 (79, 86)	83 (81, 86)	81 (77, 86)	85 (87, 88)	83 (80, 86)	82 (78, 86)	84 (80, 87)
c. If someone was hurting you emotionally or physically	60 (56, 63)	72 (67, 76)	51 (46, 56)	60 (56, 63)	68 (63, 74)	54 (49, 59)	61 (58, 65)	71 (66, 76)	54 (49, 58)
d. If you were using illegal drugs (marijuana or hash, cocaine, crack, etc.)	74 (71, 77)	83 (78, 86)	68 (63, 72)	72 (69, 76)	81 (76, 85)	66 (62, 71)	73 (69, 76)	80 (76, 84)	66 (62, 71)
e. If you wanted to be tested for HIV (the virus that causes AIDS)	85 (83, 88)	87 (83, 90)	84 (80, 87)	83 (80, 85)	85 (81, 89)	81 (77, 84)	81 (79, 84)	83 (79, 87)	80 (76, 84)
f. If you planned to use birth control after your baby was born	89 (86, 91)	96 (93, 97)	84 (80, 87)	88 (85, 90)	94 (91, 97)	83 (79, 87)	89 (86, 91)	93 (90, 96)	85 (81, 88)
Survey Question 66. At any time during your pregnancy, did a doctor, nurse or other health care worker ask you about the following things?									
a. "Baby blues" or post partum depression	75 (72, 78)	79 (74, 83)	73 (68, 77)	77 (74, 80)	80 (75, 85)	75 (71, 79)	78 (75, 81)	83 (78, 86)	75 (70, 79)
b. Tests that could be done during your pregnancy to see if your baby had a birth defect or genetic disease.	92 (90, 94)	89 (85, 91)	94 (91, 96)	92 (90, 94)	86 (82, 90)	96 (93, 97)	82 (79, 84)	78 (73, 82)	85 (81, 88)

- Provider screening rates were reported at approximately 90% or higher for smoking and planning for postpartum birth control in 2003.
- The lowest provider screening rates were reported for domestic violence (61%) and use of illegal drugs (73%) in 2003.
- Between 2000 and 2003, provider screening for domestic violence (51% in 2000) and post partum depression (74% in 2000) increased significantly.

Perinatal Indicators Report for Washington Residents

Breastfeeding	PRAMS 2001			PRAMS 2002			PRAMS 2003		
Survey Question 46. Did you ever breastfeed or pump breast milk to feed to your new baby after delivery?	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid
	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)	Percent (95% CI)
Percent of women who responded they ever breastfed	90 (88, 92)	84 (80, 88)	95 (92, 97)	90 (88, 93)	86 (82, 90)	93 (91, 95)	90 (88, 92)	85 (81, 88)	94 (91, 96)
Percent of women who reported breastfeeding at two months post partum	71 (67, 74)	61 (55, 66)	78 (74, 82)	68 (65, 71)	56 (50, 61)	76 (72, 80)	69 (66, 72)	58 (52, 63)	78 (74, 82)

- In 2003, initiation of breastfeeding was high in Washington State at approximately 90%. However, rates dropped to approximately 69% at 2 months postpartum.
- This decline is more acute among women receiving Medicaid. Approximately 85% of women receiving Medicaid reported initiating breastfeeding, but this rate dropped to approximately 58% at 2 months postpartum.

Perinatal Indicators Report for Washington Residents

Folic Acid Use Prior to Pregnancy	PRAMS 2001			PRAMS 2002			PRAMS 2003		
Survey Question 3. In the month <i>before</i> you got pregnant with your new baby, how many times a week did you take a multivitamin (a pill that contains many different vitamins and minerals?)	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)
I didn't take a multivitamin at all	55 (51, 58)	73 (68, 77)	42 (37, 47)	54 (50, 57)	68 (62, 73)	44 (39, 49)	54 (50, 57)	72 (67, 77)	39 (34, 43)
1 to 3 times a week	10 (8, 12)	11 (8, 15)	9 (7, 13)	9 (7, 11)	9 (5, 12)	10 (7, 13)	11 (9, 13)	9 (6, 12)	12 (10, 16)
4 to 6 times a week	6 (4, 8)	3 (1, 5)	8 (6, 12)	8 (6, 10)	4 (2, 6)	11 (8, 14)	8 (6, 10)	5 (3, 8)	10 (8, 14)
Every day of the week	29 (26, 32)	13 (10, 17)	40 (36, 45)	29 (26, 32)	20 (15, 24)	35 (31, 40)	27 (24, 31)	14 (11, 18)	39 (34, 43)

- In 2003, only about 27% of women reported taking a multivitamin every day of the week, and about 54% of women reported not taking any multivitamin at all in the month prior to becoming pregnant.
- Women receiving Medicaid were less likely to report daily use, and more likely than women not receiving Medicaid to report not taking a multivitamin at all in the month prior to becoming pregnant.

Perinatal Indicators Report for Washington Residents

Sleep Position	PRAMS 2001			PRAMS 2002			PRAMS 2003		
Survey Question 51. How do you <i>most often</i> lay your baby down to sleep now?	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid	Total	Medicaid	Non-Medicaid
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)	(95% CI)
On his or her side	14	17	12	13	17	11	12	12	13
	(12, 17)	(14, 21)	(9, 16)	(11, 16)	(13, 21)	(8, 14)	(10, 15)	(9, 16)	(10, 16)
On his or her back	71	65	75	74	71	75	76	72	79
	(68, 74)	(60,70)	(71, 79)	(71, 77)	(66, 76)	(71, 79)	(73, 79)	(67, 76)	(75, 83)
On his or her stomach	9	8	9	9	5	12	8	9	8
	(7, 11)	(6, 12)	(6, 12)	(7, 12)	(3, 8)	(9, 15)	(7, 11)	(7, 13)	(5, 11)
On his or her side and back	4	7	2	3	5	1	3	6	1
	(3, 5)	(5, 10)	(1, 4)	(2, 4)	(3, 7)	(0, 2)	(2, 4)	(4, 9)	(0, 1)
Other ⁵²	3	3	2	1	1	0	1	1	0

- In 2003, approximately 76% of mothers reported laying their newborns down to sleep most often on their backs.
- Between 2000 and 2003, the percentage of women who reported laying their newborns down to sleep on their back increased. This increase was predominantly seen among women who received Medicaid.

52. "Other" includes "side and stomach," "back and stomach," and "all 3 positions."

Perinatal Indicators Report for Washington Residents

Post Partum Depression	PRAMS 2001			PRAMS 2002			PRAMS 2003		
Survey Question 60. In the months after your delivery, would you say that you were...	Total Percent (95% CI)	Medicaid Percent (95% CI)	Non-Medicaid Percent (95% CI)	Total Percent (95% CI)	Medicaid Percent (95% CI)	Non-Medicaid Percent (95% CI)	Total Percent (95% CI)	Medicaid Percent (95% CI)	Non-Medicaid Percent (95% CI)
Not depressed at all	41 (38, 45)	39 (34, 44)	43 (39, 48)	44 (40, 47)	43 (38, 49)	44 (39, 49)	43 (39, 46)	37 (33, 42)	47 (43, 52)
A little depressed	38 (35, 42)	38 (33, 43)	39 (34, 43)	38 (35, 42)	38 (32, 43)	39 (34, 44)	36 (33, 40)	35 (30, 40)	37 (33, 42)
Moderately depressed	13 (11, 16)	13 (10, 18)	13 (10, 17)	11 (9, 14)	11 (7, 14)	12 (9, 15)	14 (11, 16)	17 (13, 21)	11 (8, 15)
Very depressed	3 (2, 4)	5 (3, 8)	2 (1, 4)	4 (2, 5)	4 (2, 6)	3 (2, 5)	5 (4, 6)	7 (5, 9)	3 (2, 5)
Very depressed and had to get help	4 (2, 5)	5 (3, 8)	3 (1, 5)	3 (2, 4)	5 (2, 7)	2 (1, 3)	3 (2, 4)	4 (3, 7)	1 (1, 3)

■ In 2003, approximately 22% of women reported being moderately depressed, very depressed, or very depressed and had to get help in the months following delivery.

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